

WHAT IS CLAIMED IS:

1. An aliphatic-aromatic copolyester film comprising a biodegradable precursor film comprising filler particles and a copolyester comprising from about 10 mole% to about 30 mole% of aromatic dicarboxylic acid or ester thereof, from about 20 mole% to about 40 mole% of aliphatic dicarboxylic acid or ester thereof, and from about 30 mole% to about 60 mole% dihydric alcohol, and wherein the weight average molecular weight of the copolyester is from about 90,000 to about 160,000 Daltons, and wherein the number average molecular weight of the copolyester is from about 35,000 to about 70,000 Daltons, and wherein the glass transition temperature of the copolyester is less than about 0°C.
2. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the filler particles are present in the precursor film in an amount of from about 30% (by weight of film and filler particles) to about 80% (by weight of film and filler particles).
3. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the filler particles are present in the precursor film in an amount of from about 50% (by weight of film and filler particles) to about 55% (by weight of film and filler particles).
4. The aliphatic-aromatic copolyester film as set forth in claim 2 wherein the filler particles are selected from the group consisting of calcium carbonate, non-swellable clays, silica, alumina, barium sulfate, sodium carbonate, talc, magnesium sulfate, titanium dioxide, zeolites, aluminum sulfate, diatomaceous earth, magnesium sulfate, magnesium carbonate, barium carbonate, kaolin, mica, carbon, calcium

oxide, magnesium oxide, aluminum hydroxide and polymer particles.

5. The aliphatic-aromatic copolyester film as set forth in claim 4 wherein the filler particles are calcium carbonate.

6. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the copolyester comprises from about 15 mole% to about 25 mole% of aromatic dicarboxylic acid or ester thereof, from about 25 mole% to about 35% percent of aliphatic dicarboxylic acid or ester thereof, and from about 45 mole% to about 55 mole% dihydric alcohol and wherein the weight average molecular weight of the copolyester is from about 100,000 to about 130,000 Daltons, and wherein the number average molecular weight of the copolyester is from about 40,000 to about 60,000 Daltons.

7. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the copolyester comprises from about 17.5 mole% to about 22.5 mole% of aromatic dicarboxylic acid or ester thereof, from about 27.5 mole% to about 32.5 mole% percent of aliphatic dicarboxylic acid or ester thereof, and from about 47.5 mole% to about 52.5 mole% dihydric alcohol and wherein the weight average molecular weight of the copolyester is from about 105,000 to about 120,000, and wherein the number average molecular weight of the copolyester is from about 42,000 to about 50,000.

8. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the aromatic dicarboxylic acid or ester thereof is selected from the group consisting of unsubstituted and substituted aromatic dicarboxylic acids and C₁-C₆ esters of aromatic dicarboxylic acids.

9. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the aromatic dicarboxylic acid or ester thereof is selected from the group consisting of terephthalic acid, dimethyl terephthalate, isophthalic acid, dimethyl isophthalate, 2,6-naphthalene dicarboxylic acid, dimethyl-2,6-naphthalate, 2,7-naphthalenedicarboxylic acid, dimethyl-2,7-naphthalate, 3,4'-diphenyl ether dicarboxylic acid, dimethyl-3,4'-diphenyl ether dicarboxylate, 4,4'-diphenyl ether dicarboxylic acid, dimethyl-4,4'-diphenyl ether dicarboxylate, 3,4'-diphenyl sulfide dicarboxylic acid, dimethyl-3,4'-diphenyl sulfide dicarboxylate, 4,4'-diphenyl sulfide dicarboxylic acid, dimethyl-4,4'-diphenyl sulfide dicarboxylate, 3,4'-diphenyl sulfone dicarboxylic acid, dimethyl-3,4'-diphenyl sulfone dicarboxylate, 4,4'-diphenyl sulfone dicarboxylic acid, dimethyl-4,4'-diphenyl sulfone dicarboxylate, 3,4'-benzophenonedicarboxylic acid, dimethyl-3,4'-benzophenonedicarboxylate, 4,4'-benzophenonedicarboxylic acid, dimethyl-4,4'-benzophenonedicarboxylate, 1,4-naphthalene dicarboxylic acid, dimethyl-1,4-naphthalate, 4,4'-methylene bis(benzoic acid), dimethyl-4,4'-methylenebis(benzoate), and mixtures of two or more thereof.

10. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the aliphatic dicarboxylic acid or ester thereof is selected from the group consisting of C₁-C₆ substituted or unsubstituted linear or branched or cyclic aliphatic dicarboxylic acids and lower alkyl esters of aliphatic dicarboxylic acids.

11. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the aliphatic dicarboxylic acid or ester thereof is selected from the group consisting of oxalic acid, dimethyl oxalate, malonic acid, dimethyl malonate, succinic acid, dimethyl succinate, methylsuccinic acid,

glutaric acid, dimethyl glutarate, 2-methylglutaric acid, 3-methylglutaric acid, adipic acid, dimethyl adipate, 3-methyladipic acid, 2,2,5,5-tetramethylhexanedioic acid, pimelic acid, suberic acid, azelaic acid, dimethyl azelate, sebacic acid, 1,11-undecanedicarboxylic acid, 1,10-decanedicarboxylic acid, undecanedioic acid, 1,12-dodecanedicarboxylic acid, hexadecanedioic acid, docosanedioic acid, tetracosanedioic acid, dimer acid, 1,4-cyclohexanedicarboxylic acid, dimethyl-1,4-cyclohexanedicarboxylate, 1,3-cyclohexanedicarboxylic acid, dimethyl-1,3-cyclohexanedicarboxylate, 1,1-cyclohexanediacetic acid, and mixtures of two or more thereof.

12. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the aliphatic dicarboxylic acid or ester thereof is selected from the group consisting of succinic acid, dimethyl succinate, glutaric acid, dimethyl glutarate, adipic acid, dimethyl adipate, and dimer acid.

13. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the dihydric alcohol is selected from the group consisting of unsubstituted or substituted, straight chain, branched, or cyclic aliphatic, aliphatic-aromatic, or aromatic diols having from 2 carbon atoms to 36 carbon atoms and poly(alkylene ether) glycols with molecular weights from about 250 to about 4,000.

14. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the dihydric alcohol is selected from the group consisting of ethylene glycol, 1,3-propanediol, 1,4-butanediol, 1,6-hexanediol, 1,8-octanediol, 1,10-decanediol, 1,12-dodecanediol, 1,14-tetradecanediol, 1,16-hexadecanediol, 4,8-bis(hydroxymethyl)-tricyclo[5.2.1.0/2.6]decane, 1,4-cyclohexanedimethanol, di(ethylene

glycol), tri(ethylene glycol), poly(ethylene oxide) glycols, poly(butylene ether) glycols, isosorbide, and mixtures of two or more thereof.

15. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the dihydric alcohol is selected from the group consisting of ethylene glycol, 1,3-propanediol, 1,4-butanediol, 1,6-hexanediol, and poly(ethylene oxide) glycols.

16. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film additionally comprises a polyfunctional branching agent.

17. The aliphatic-aromatic copolyester film as set forth in claim 16 wherein the polyfunctional branching agent is selected from the group consisting of a material with three or more carboxylic acid functions, three or more hydroxy functions, and mixtures thereof.

18. The aliphatic-aromatic copolyester film as set forth in claim 16 wherein the polyfunctional branching agent is selected from the group consisting of 1,2,4-benzenetricarboxylic acid (trimellitic acid), trimethyl-1,2,4-benzenetricarboxylate, 1,2,4-benzenetricarboxylic anhydride (trimellitic anhydride), 1,3,5-benzenetricarboxylic acid, 1,2,4,5-benzenetetracarboxylic acid (pyromellitic acid), 1,2,4,5-benzenetetracarboxylic dianhydride (pyromellitic anhydride), 3,3',4,4'-benzophenonetetracarboxylic dianhydride, 1,4,5,8-naphthalenetetracarboxylic dianhydride, citric acid, tetrahydrofuran-2,3,4,5-tetracarboxylic acid, 1,3,5-cyclohexanetricarboxylic acid, pentaerythritol, 2-(hydroxymethyl)-1,3-propanediol, 2,2-

bis(hydroxymethyl)propionic acid, and mixtures of two or more thereof.

19. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the aromatic dicarboxylic acid is terephthalic acid, the aliphatic dicarboxylic acid is adipic acid, and the dihydric alcohol is 1,4 butanediol.

20. The aliphatic-aromatic copolyester film as set forth in claim 19 wherein the filler particles are calcium carbonate.

21. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the aliphatic-aromatic copolyester film has a thickness of less than about 250 micrometers.

22. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the aliphatic-aromatic copolyester film has a thickness of from about 2.5 micrometers to about 130 micrometers.

23. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and has a modulus ratio of from about 0.5 to about 3.5.

24. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and has a modulus ratio of from about 0.75 to about 3.25.

25. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler

particles and has a modulus ratio of from about 1.0 to about 3.0.

26. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and has a modulus ratio of from about 0.45 to about 4.25.

27. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and has a modulus ratio of from about 0.75 to about 3.75.

28. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and has a modulus ratio of from about 1.0 to about 3.5

29. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and can be stretched in the machine direction and not break until from about 50% strain to about 1000% strain is reached.

30. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and can be stretched in the machine direction and not break until from about 300% strain to about 1000% strain is reached.

31. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and can be stretched in the machine direction and not break until from about 450% strain to about 1000% strain is reached.

32. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and can be stretched in the machine direction and not break until from about 50% strain to about 1000% strain is reached.

33. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and can be stretched in the machine direction and not break until from about 75% strain to about 1000% strain is reached.

34. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and can be stretched in the machine direction and not break until from about 250% strain to about 1000% strain is reached.

35. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and can be stretched in the cross direction and not break until from about 50% strain to about 1000% strain is reached.

36. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and can be stretched in the cross direction and not break until from about 300% strain to about 1000% strain is reached.

37. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and can be stretched in the cross direction and not break until from about 450% strain to about 1000% strain is reached.

38. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and can be stretched in the cross direction and not break until from about 50% strain to about 1000% strain is reached.

39. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and can be stretched in the cross direction and not break until from about 250% strain to about 1000% strain is reached.

40. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and can be stretched in the cross direction and not break until from about 350% strain to about 1000% strain is reached.

41. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a break stress of from about 6 MPa to about 16 MPa.

42. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a break stress of from about 8 MPa to about 14 MPa.

43. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a break stress of from about 10 MPa to about 12 MPa.

44. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a break stress of from about 4 MPa to about 16 MPa.

45. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a break stress of from about 6 MPa to about 12 MPa.

46. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a break stress of from about 8 MPa to about 10 MPa.

47. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a yield stress of from about 4 MPa to about 16 MPa.

48. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a yield stress of from about 6 MPa to about 14 MPa.

49. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 50% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a yield stress of from about 8 MPa to about 10 MPa.

50. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a yield stress of from about 4 MPa to about 16 MPa.

51. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a yield stress of from about 6 MPa to about 12 MPa.

52. The aliphatic-aromatic copolyester film as set forth in claim 1 wherein the precursor film comprises about 55% (by weight of the film and filler particles) of filler particles and when stretched in the machine direction has a yield stress of from about 8 MPa to about 10 MPa.

53. An aliphatic-aromatic copolyester film comprising a biodegradable stretched film comprising nonporous filler particles and a biodegradable aliphatic-aromatic copolyester having a glass transition temperature of less than about 0°C a weight average molecular weight of from about 90,000 to about 160,000 Daltons, wherein the nonporous filler particles comprise from about 30 %(by weight of film and filler) to about 80% (by weight film and filler) of the copolyester film, and wherein the film has a water vapor transmission rate of greater than about 2500 g/m²/day, a modulus of elasticity in the machine direction of less than about 300 MPa, and an elongation at break in the machine direction of greater than about 70%.

54. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein biodegradable aliphatic-aromatic copolyester comprises from about 10 mole% to about 30 mole% of aromatic dicarboxylic acid or ester thereof, from about 20 mole% to about 40 mole% of aliphatic dicarboxylic acid or ester thereof, and from about 30 mole% to about 60 mole% dihydric alcohol.

55. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the filler particles are selected from the group consisting of calcium carbonate, non-swellable clays, silica, alumina, barium sulfate, sodium carbonate, talc, magnesium sulfate, titanium dioxide, zeolites, aluminum sulfate, diatomaceous earth, magnesium sulfate, magnesium carbonate, barium carbonate, kaolin, mica, carbon, calcium oxide, magnesium oxide, aluminum hydroxide and polymer particles.

56. The aliphatic-aromatic copolyester film as set forth in claim 55 wherein the filler particles are calcium carbonate

57. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the filler particles are nonporous and spheroid.

58. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the biodegradable aliphatic-aromatic copolyester comprises from about 15 mole% to about 25 mole% of aromatic dicarboxylic acid or ester thereof, from about 25 mole% to about 35% percent of aliphatic dicarboxylic acid or ester thereof, and from about 45 mole% to about 55 mole% dihydric alcohol and wherein the weight average molecular weight of the copolyester is from about 100,000 to about 130,000 Daltons, and wherein the number average molecular weight of the copolyester is from about 40,000 to about 60,000 Daltons.

59. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the biodegradable aliphatic-aromatic copolyester comprises from about 17.5 mole% to about 22.5 mole% of aromatic dicarboxylic acid or ester thereof, from about 27.5 mole% to about 32.5 mole% percent of aliphatic dicarboxylic acid or ester thereof, and from about 47.5 mole% to about 52.5 mole% dihydric alcohol and wherein the weight average molecular weight of the copolyester is from about 105,000 to about 120,000 Daltons, and wherein the number average molecular weight of the copolyester is from about 42,000 to about 50,000 Daltons.

60. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the aromatic dicarboxylic acid or ester thereof is selected from the group consisting of unsubstituted and substituted aromatic dicarboxylic acids and C₁-C₆ esters of aromatic dicarboxylic acids.

61. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the aromatic dicarboxylic acid or ester thereof is selected from the group consisting of terephthalic acid, dimethyl terephthalate, isophthalic acid, dimethyl isophthalate, 2,6-naphthalene dicarboxylic acid, dimethyl-2,6-naphthalate, 2,7-naphthalenedicarboxylic acid, dimethyl-2,7-naphthalate, 3,4'-diphenyl ether dicarboxylic acid, dimethyl-3,4'-diphenyl ether dicarboxylate, 4,4'-diphenyl ether dicarboxylic acid, dimethyl-4,4'-diphenyl ether dicarboxylate, 3,4'-diphenyl sulfide dicarboxylic acid, dimethyl-3,4'-diphenyl sulfide dicarboxylate, 4,4'-diphenyl sulfide dicarboxylic acid, dimethyl-4,4'-diphenyl sulfide dicarboxylate, 3,4'-diphenyl sulfone dicarboxylic acid, dimethyl-3,4'-diphenyl sulfone dicarboxylate, 4,4'-diphenyl sulfone dicarboxylic acid, dimethyl-4,4'-diphenyl sulfone dicarboxylate, 3,4'-benzophenonedicarboxylic acid, dimethyl-3,4'-benzophenonedicarboxylate, 4,4'-benzophenonedicarboxylic acid, dimethyl-4,4'-benzophenonedicarboxylate, 1,4-naphthalene dicarboxylic acid, dimethyl-1,4-naphthalate, 4,4'-methylene bis(benzoic acid), dimethyl-4,4'-methylenebis(benzoate), and mixtures of two or more thereof.

62. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the aliphatic dicarboxylic acid or ester thereof is selected from the group consisting of C₁-C₆ substituted or unsubstituted linear or branched or cyclic aliphatic dicarboxylic acids and lower alkyl esters of aliphatic dicarboxylic acids.

63. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the aliphatic dicarboxylic acid or ester thereof is selected from the group consisting of oxalic acid, dimethyl oxalate, malonic acid, dimethyl malonate, succinic acid, dimethyl succinate, methylsuccinic acid,

glutaric acid, dimethyl glutarate, 2-methylglutaric acid, 3-methylglutaric acid, adipic acid, dimethyl adipate, 3-methyladipic acid, 2,2,5,5-tetramethylhexanedioic acid, pimelic acid, suberic acid, azelaic acid, dimethyl azelate, sebacic acid, 1,11-undecanedicarboxylic acid, 1,10-decanedicarboxylic acid, undecanedioic acid, 1,12-dodecanedicarboxylic acid, hexadecanedioic acid, docosanedioic acid, tetracosanedioic acid, dimer acid, 1,4-cyclohexanedicarboxylic acid, dimethyl-1,4-cyclohexanedicarboxylate, 1,3-cyclohexanedicarboxylic acid, dimethyl-1,3-cyclohexanedicarboxylate, 1,1-cyclohexanediacetic acid, and mixtures of two or more thereof.

64. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the aliphatic dicarboxylic acid or ester thereof is selected from the group consisting of succinic acid, dimethyl succinate, glutaric acid, dimethyl glutarate, adipic acid, dimethyl adipate, and dimer acid.

65. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the dihydric alcohol is selected from the group consisting of unsubstituted or substituted, straight chain, branched, or cyclic aliphatic, aliphatic-aromatic, or aromatic diols having from 2 carbon atoms to 36 carbon atoms and poly(alkylene ether) glycols with molecular weights from about 250 to about 4,000.

66. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the dihydric alcohol is selected from the group consisting of ethylene glycol, 1,3-propanediol, 1,4-butanediol, 1,6-hexanediol, 1,8-octanediol, 1,10-decanediol, 1,12-dodecanediol, 1,14-tetradecanediol, 1,16-hexadecanediol, 4,8-bis(hydroxymethyl)-tricyclo[5.2.1.0/2.6]decane, 1,4-cyclohexanedimethanol, di(ethylene

glycol), tri(ethylene glycol), poly(ethylene oxide) glycols, poly(butylene ether) glycols, isosorbide, and mixtures of two or more thereof.

67. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the dihydric alcohol is selected from the group consisting of ethylene glycol, 1,3-propanediol, 1,4-butanediol, 1,6-hexanediol, and poly(ethylene oxide) glycols.

68. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the film additionally comprises a polyfunctional branching agent.

69. The aliphatic-aromatic copolyester film as set forth in claim 68 wherein the polyfunctional branching agent is selected from the group consisting of a material with three or more carboxylic acid functions, three or more hydroxy functions, and mixtures thereof.

70. The aliphatic-aromatic copolyester film as set forth in claim 68 wherein the polyfunctional branching agent is selected from the group consisting of 1,2,4-benzenetricarboxylic acid (trimellitic acid), trimethyl-1,2,4-benzenetricarboxylate, 1,2,4-benzenetricarboxylic anhydride (trimellitic anhydride), 1,3,5-benzenetricarboxylic acid, 1,2,4,5-benzenetetracarboxylic acid (pyromellitic acid), 1,2,4,5-benzenetetracarboxylic dianhydride (pyromellitic anhydride), 3,3',4,4'-benzophenonetetracarboxylic dianhydride, 1,4,5,8-naphthalenetetracarboxylic dianhydride, citric acid, tetrahydrofuran-2,3,4,5-tetracarboxylic acid, 1,3,5-cyclohexanetricarboxylic acid, pentaerythritol, 2-(hydroxymethyl)-1,3-propanediol, 2,2-

bis(hydroxymethyl)propionic acid, and mixtures of two or more thereof.

71. The aliphatic-aromatic copolyester film as set forth in claim 54 wherein the aromatic dicarboxylic acid is terephthalic acid, the aliphatic dicarboxylic acid is adipic acid, and the dihydric alcohol is 1,4 butanediol.

72. The aliphatic-aromatic copolyester film as set forth in claim 71 wherein the filler material is calcium carbonate.

73. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a thickness of less than about 250 micrometers.

74. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a thickness of from about 2.5 micrometers to about 130 micrometers.

75. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a hydrostatic pressure resistance of at least about 60 millibar.

76. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a hydrostatic pressure resistance of at least about 80 millibar.

77. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a hydrostatic pressure resistance of at least about 120 millibar.

78. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a hydrostatic pressure resistance of at least about 180 millibar.

79. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a water vapor transmission rate of at least about 2000 g/m²/day.

80. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a water vapor transmission rate of at least about 5,000 g/m²/day.

81. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a water vapor transmission rate of at least about 10,000 g/m²/day.

82. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a water vapor transmission rate of at least about 25,000 g/m²/day.

83. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a modulus of elasticity of from about 50 MPa to about 250 MPa.

84. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a modulus of elasticity of from about 70 MPa to about 150 MPa.

85. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a modulus of elasticity of from about 80 MPa to about 100 MPa.

86. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film can be stretched in the machine direction and not break until from about 15% strain to about 100% strain is reached.

87. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film can be stretched in the machine direction and not break until from about 20% strain to about 60% strain is reached.

88. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film can be stretched in the machine direction and not break until from about 30% strain to about 50% strain is reached.

89. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film can be stretched in the cross direction and not break until from about 150% strain to about 500% strain is reached.

90. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film can be stretched in the cross direction and not break until from about 175% strain to about 400% strain is reached.

91. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film can be stretched in the cross direction and not break until from about 200% strain to about 300% strain is reached.

92. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a break stress of from about 10 MPa to about 50 MPa.

93. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a break stress of from about 15 MPa to about 40 MPa.

94. The aliphatic-aromatic copolyester film as set forth in claim 53 wherein the aliphatic-aromatic copolyester film has a break stress of from about 25 MPa to about 35 MPa.